

WHAT IS CLAIMED IS:

1. A conductive paste used for a rear electrode of a Si solar battery, the conductive paste comprising:
  - an Al powder;
  - a glass frit;
  - 5 an organic vehicle; and
  - particles of at least one of an organic compound and carbon which are insoluble or slightly soluble in the organic vehicle.
2. A conductive paste according to Claim 1, wherein the mean particle size of the particles is in the range of about 0.5 to 10  $\mu\text{m}$ .
3. A conductive paste according to Claim 2, wherein the particle content is in the range of about 1 to 10 parts by weight relative to 100 parts by weight of the Al powder.
4. A conductive paste according to Claim 3, wherein the Al powder is about 60-80 wt% of the paste and has a particle size of about 1-10  $\mu\text{m}$ , the glass frit is about 1-5 wt% of the paste, and the organic vehicle is about 15-40 wt% of the paste.
5. A conductive paste according to Claim 4, wherein the organic compound is selected from the group consisting of polyolefin resin, epoxy resin, polyurethane resin, acrylic resin and terephthalic acid.
6. A conductive paste according to Claim 1, wherein the particle content is in the range of about 1 to 10 parts by weight relative to 100 parts by weight of the Al powder.
7. A conductive paste according to Claim 1, wherein the Al powder is about 60-80 wt% of the paste and has a particle size of about 1-10  $\mu\text{m}$ , the glass frit is

about 1-5 wt% of the paste, and the organic vehicle is about 15-40 wt% of the paste.

5           8.       A conductive paste according to Claim 1, wherein the organic compound is selected from the group consisting of polyolefin resin, epoxy resin, polyurethane resin, acrylic resin and terephthalic acid.

          9.       A method for manufacturing a solar battery including a Si wafer having a p-Si layer and an n-Si layer, a light-receptive surface electrode on the n-Si layer, and  
10       a rear electrode on the p-Si layer, the method comprising :

                  forming the rear electrode by applying a conductive paste onto the p-Si layer of the Si wafer and firing the conductive paste, wherein the conductive paste comprises an Al powder, a glass frit, an organic vehicle and particles of at least one of an organic compound and carbon which are insoluble or slightly soluble in the organic  
15       vehicle.

          10.      A method for manufacturing a solar battery according to Claim 9, wherein the particles have a mean diameter in the range of about 0.5 to 10  $\mu\text{m}$ .

          11.      A method for manufacturing a solar battery according to Claim 10, wherein the particles constitute about 1 to 10 parts per 100 parts of aluminum powder.

          12.      A method for manufacturing a solar battery according to Claim 11, wherein the Al powder is about 60-80 wt% of the paste and has a particle size of about 1-10  $\mu\text{m}$ , the glass frit is about 1-5 wt% of the paste, and the organic vehicle is about 15-40 wt% of the paste.

5

          13.      A method for manufacturing a solar battery according to Claim 12, wherein the organic compound is selected from the group consisting of polyolefin resin, epoxy resin, polyurethane resin, acrylic resin and terephthalic acid.

14. A method for manufacturing a solar battery according to Claim 9,  
10 wherein the Al powder is about 60-80 wt% of the paste and has a particle size of about  
1-10  $\mu\text{m}$ , the glass frit is about 1-5 wt% of the paste, and the organic vehicle is  
about 15-40 wt% of the paste.

15. A method for manufacturing a solar battery according to Claim 9,  
wherein the organic compound is selected from the group consisting of polyolefin  
15 resin, epoxy resin, polyurethane resin, acrylic resin and terephthalic acid.

16. A solar battery comprising:  
a Si wafer having a p-Si layer and an n-Si layer;  
a light-receptive surface electrode on the n-Si layer, and  
a rear electrode on the p-Si layer,  
20 wherein the rear electrode contains pores with a mean diameter in the  
range of about 0.5 to 10  $\mu\text{m}$ , occupying about 1 to 20 percent of the volume of the rear  
electrode.

17. A solar battery according to Claim 16, wherein the rear electrode  
25 contains pores with a mean diameter in the range of about 1 to 8  $\mu\text{m}$ , occupying about  
3 to 15 percent of the volume of the rear electrode.

18. A solar battery according to Claim 17, wherein the rear electrode has a  
thickness of about 20 to 100  $\mu\text{m}$ .

19. A solar battery according to Claim 16, wherein the rear electrode has a  
30 thickness of about 20 to 100  $\mu\text{m}$ .